

AMENDMENTS TO THE CLAIMS

In the Claims:

Please amend Claim 18. A complete copy of the claims including marked-up versions of each claim that is amended in this Amendment appears below.

1 Claims 1-12 (Cancelled)

1 13. (Previously Presented) An apparatus for automatic control of fluid flow in
2 response to the proximity of an object to the apparatus and for communicating with a
3 communication device, the apparatus comprising:

4 a single infrared transmitter for selectively, alternately transmitting both an
5 infrared detection signal and a transmitted infrared communication signal;

6 an infrared receiver for receiving a reflected infrared detection signal;

7 an infrared receiver for receiving a received infrared communication signal; and

8 logic operatively connected to drive said transmitter to transmit said infrared

9 detection signal and said transmitted infrared communication signal, said logic also being

10 operatively configured to receive said reflected infrared detection signal and said received

11 infrared communication signal from said receivers, said logic being configured to include,

12 in said transmitted communication signal, information indicative of an operational state of

13 the apparatus, said logic also being configured to control fluid flow based upon the
14 reflected detection signal.

1 14. (Cancelled)

1 15. (Previously Presented) An apparatus as defined in Claim 13, wherein said infrared
2 detection signal comprises a sequence of pulses.

1 16-17 (Cancelled)

1 18. (Currently Amended) An apparatus as defined in Claim ~~17~~, 13, wherein said logic
2 is configured to exclude simultaneous transmission of ~~the~~ said infrared detection signal
3 and said transmitted infrared communication signal.

1 19. (Previously Presented) An apparatus for automatic control of fluid flow when an
2 object is in proximity with said apparatus and for communicating with a communication
3 device, said apparatus comprising:

4 a transmitter for transmitting a detection signal and a communication signal;

5 a receiver for receiving a reflected detection signal; and

6 logic configured to control fluid flow based upon said reflected detection signal;

7 wherein said receiver comprises an infrared detector having a hole, wherein said
8 apparatus further comprises another infrared detector such that an infrared signal may
9 pass through said hole and be received by said other infrared detector.

1 Claims 20-28 (Cancelled)

1 29. (Previously Presented) An apparatus as defined in Claim 13, wherein said infrared
2 detection signal comprises pulses having a repetition rate of between two and ten Hertz.

1 30. (Previously Presented) An apparatus as defined in Claim 13, wherein said
2 transmitted and received infrared communication signals each comprise a sequence of
3 pulses representing data.

1 31. (Previously Presented) An apparatus as defined in Claim 13, wherein the data rate
2 for said transmitted and received infrared communication signals is approximately 9600
3 bits per second.

1 32. (Previously Presented) An apparatus as defined in Claim 13, wherein the coupling
2 between the logic and said transmitter comprises a digital-to-analog converter and an
3 infrared driver.

1 33. (Previously Presented) An apparatus as defined in Claim 13, wherein said infrared
2 receiver for receiving said reflected infrared detection signal and said infrared receiver for
3 receiving said received infrared communication signal are configured in a back-to-back
4 arrangement.

1 34. (Previously Presented) An apparatus as defined in Claim 13, wherein said infrared
2 receiver for receiving said reflected infrared detection signal and said infrared receiver for
3 receiving said received infrared communication signal each comprise a photo detector.

1 35. (Previously Presented) An apparatus as defined in Claim 13, wherein said infrared
2 receiver for receiving said reflected infrared detection signal and said infrared receiver for
3 receiving said received infrared communication signal together comprise a single photo
4 detector.

1 36. (Previously Presented) An apparatus as defined in Claim 13, additionally
2 comprising a threshold detector for comparing said reflected infrared detection signal to a
3 threshold value and providing the result of the comparison as an output to said logic.

1 37. (Previously Presented) An apparatus for automatic control of fluid flow in
2 response to the proximity of an object to the apparatus and for communicating with a
3 communication device, the apparatus comprising:

4 a transmitter device for selectively, alternately transmitting both a detection signal
5 and a transmitted communication signal;

6 a receiver device for receiving a reflected detection signal and a received
7 communication signal; and

8 logic operatively connected to drive said transmitter device to transmit said
9 detection signal and said transmitted communication signal, said logic also being
10 operatively configured to receive said reflected detection signal and said received
11 communication signal from said receiver device, said logic being configured to include,
12 in said transmitted communication signal, information indicative of an operational state of
13 the apparatus, said logic also being configured to control fluid flow based upon the
14 reflected detection signal.

1 38. (Previously Presented) An apparatus as defined in Claim 37, wherein each of said
2 signals comprises an infrared signal.

1 39. (Previously Presented) An apparatus as defined in Claim 37, wherein each of said
2 signals a sequence of digital pulses.

1 40. (Previously Presented) An apparatus as defined in Claim 37, wherein said logic is
2 configured to exclude simultaneous transmission of said detection signal and said
3 transmitted communication signal.

1 41. (Previously Presented) An apparatus as defined in Claim 37, wherein said receiver
2 device comprises a single photo detector.

1 42. (Previously Presented) An apparatus as defined in Claim 37, wherein said receiver
2 device comprises a receiver for receiving said reflected detection signal and a receiver for
3 receiving said received communication signal.

1 43. (Previously Presented) An apparatus as defined in Claim 42, wherein said receiver
2 for receiving said reflected infrared detection signal and said receiver for receiving said
3 received infrared communication signal are configured in a back-to-back arrangement.

1 44. (Previously Presented) An apparatus as defined in Claim 37, additionally
2 comprising a threshold detector for comparing said reflected detection signal to a
3 threshold value and providing the result of the comparison as an output to said logic.

1 45. (Previously Presented) An apparatus for automatic control of fluid flow in
2 response to the proximity of an object to the apparatus and for communicating via
3 bidirectional telemetry with an external communication device, the apparatus comprising:
4 a transmitter device for transmitting both a detection signal and a transmitted
5 communication signal for receipt by an external communication device;
6 a receiver device for receiving a detection signal reflected from an object in
7 proximity to the apparatus and a received communication signal received from an external
8 communication device; and
9 logic operatively connected to drive said transmitter device to transmit said
10 detection signal, said logic also being operatively configured to communicate
11 bidirectionally with an external communication device by causing said transmitter device
12 to transmit said transmitted communication signal and receiving said received
13 communication signal from said receiver device, said logic also being configured to
14 control fluid flow based upon the reflected detection signal.

1 46. (Previously Presented) An apparatus as defined in Claim 45, wherein each of said
2 signals comprises an infrared signal.

1 47. (Previously Presented) An apparatus as defined in Claim 45, wherein each of said
2 signals a sequence of digital pulses.

1 48. (Previously Presented) An apparatus as defined in Claim 45, wherein said logic is
2 configured to exclude simultaneous transmission of said detection signal and said
3 transmitted communication signal.

1 49. (Previously Presented) An apparatus as defined in Claim 45, wherein said receiver
2 device comprises a single photo detector.

1 50. (Previously Presented) An apparatus as defined in Claim 45, wherein said receiver
2 device comprises a receiver for receiving said reflected detection signal and a receiver for
3 receiving said received communication signal.

1 51. (Previously Presented) An apparatus as defined in Claim 50, wherein said receiver
2 for receiving said reflected infrared detection signal and said receiver for receiving said
3 received infrared communication signal are configured in a back-to-back arrangement.

1 52. (Previously Presented) An apparatus as defined in Claim 45, additionally
2 comprising a threshold detector for comparing said reflected detection signal to a
3 threshold value and providing the result of the comparison as an output to said logic.